

REMARKS

Claims 2-52, 106, 107, 182, 183, 194, 195 and 246-251 are pending in the application, with claims 106, 107, 246, 247, 250 and 251 withdrawn from consideration. Claims 28, 29 and 52 have been amended. Accordingly, claims 2-52, 106, 107, 182, 183, 194, 195 and 246-251 will be pending in the application upon entry of the instant Amendment.

Claim 52 has been amended to include the method of preparation of the hybrid monolith of Claim 106 and the modification of the pore structure with a surfactant as described in part in Claim 28. Claim 52 has also been amended to state that the surfactant is removed from the monolith structure. Support for such amendment can be found throughout the disclosed examples. Claim 28 has been amended to recite only the additional modification of hydrothermal treatment. Claim 29 has been amended to depend from claim 52. No new matter has been added by these amendments. Support for these amendments can be found throughout the specification as originally filed.

Applicant respectfully reserves the right to pursue the claims as originally filed or similar claims as well as any non-elected, canceled or otherwise unclaimed subject matter in one or more continuation, continuation-in-part, or divisional applications.

Applicants respectfully acknowledge the Examiner's determination that Claims 39, 41, 42, 43 and 50 would be allowable if rewritten in independent form. Nevertheless, reconsideration and withdrawal of the objections to this application in view of the amendments and remarks herewith, are respectfully requested, as the application is in condition for allowance.

Statement of Substance of Interview

Applicant wishes to thank Examiner Moore for the courteous and helpful telephone interview held on February 3, 2011 with Applicants' undersigned representative

and Kevin D. Wyndham. During the interview, the art cited in the Office Action was discussed.

Applicants discussed their position that a monolith, as defined by the invention, does not encompass a single particle as such a particle, in order to be useful for chromatographic purposes, would need to be exceedingly large and later carved or shaved into a useful shape. Applicants also discussed their position that none of the cited art materials is a porous monolith having increased resistance to shrinkage and enhanced capillary wall adhesion. Finally, Applicants discussed certain dependent claims in light of the cited art.

No final agreement as to the allowability of the claims was reached. Nevertheless, the claims have been amended herein based on the discussion and helpful suggestions of the Examiner.

Rejections under 35 U.S.C. §103 (a)

Claims 2-27, 52 and 248 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent No. 5,650,474 to Yamaya et al ("Yamaya"). This rejection is moot.

As described above, and without conceding the validity of the rejection. Claim 52 has been amended without prejudice to incorporate, in part, the subject matter of Claim 28. Applicants note that Claim 28 was not rejected over Yamaya. As each of the Claims 2-27 and 248 depends from Claim 52, Applicants believe the rejection is now moot.

Claims 38, 40, 44-49 and 51 are rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Yamaya as applied above in view of U.S. Patent Application Publication No. 2002/007168 to Jiang et al. ("Jiang"). This rejection is moot.

As described above, and without conceding the validity of the rejection. Claim 52 has been amended without prejudice to incorporate, in part, the subject matter of Claim 28. Applicants note that Claim 28 was not rejected over Yamaya in view of Jiang. As such, Applicants believe the rejection is now moot.

Claims 28-36, 52 and 249 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent No. 5,895,794 to Berg et al ("Berg"). This rejection is traversed.

The Examiner contends that Berg teaches a shelf stable crosslinked emulsion comprising a polysiloxane capable of crosslinking via condensation, addition or free radical reactions, which the Examiner alleges is similar to the instantly claimed materials. The Examiner contends that Berg teaches the inclusion of a surfactant, specifically nonionic surfactants. As such, the Examiner contends that the claimed materials are obvious in view of Berg. Applicants respectfully disagree.

As an initial note, the Examiner states that Berg is silent to the effect of addition of a surfactant and assumes that the adding of a surfactant to an allegedly similar composition will have the same pore modification effect. That is, the Examiner has determined that the pore modification which Applicants have demonstrated would not only have been implied, but would have been readily apparent to one of ordinary skill in the art upon reading Berg. Applicants disagree.

Specifically, Berg is related to the production of "oil-in-water" emulsions. Berg does not teach or disclose the preparation of porous particles, let alone the preparation of porous monolithic materials. As such, even if one of ordinary skill in the art were to include the surfactants described by Berg, there would have been no reason to believe that the inclusion of such surfactant would result in the modification of the pore structure of the hybrid material. In other words, one of ordinary skill in the art would have no reasonable

expectation that inclusion of such surfactant would result in the modification of the pore structure of the hybrid material.

Furthermore, Berg is completely silent as to removal of the surfactant from the emulsions formed. Indeed, unlike the instantly claimed invention in which the surfactant is removed after formation of the porous monolith, Berg requires "0.5 to 10 weight parts surfactant" in its final composition. As such, Applicants contend that one of ordinary skill in the art, upon reading Berg, would have had no reason to modify the oil-in-water emulsions of Berg to arrive at the porous monolithic materials of the instant application by the inclusion of a surfactant, followed by removal of said surfactant after formation of the material.

Claims 182, 183, 194, and 195 are rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent Application Publication No. 2003/021730 as the English Equivalent to PCT/EP01/00604 to Mueller et al. ("Mueller"). This rejection is traversed.

The Examiner contends that Mueller is directed to a polymerized-in frit in which, prior to the polymerization, the inner wall of the column is functionalized with a reactive group to which methacryloxypropyltrimethoxysilane can be added to provide added functional groups. The Examiner contends that the polymerization of polyacrylate materials inside a silica column that has been functionalized reads on the instantly claimed polymerized scaffolding networks.

Applicants respectfully disagree. As previously discussed, one of ordinary skill in the art would not read the frit of Mueller as comprising a hybrid inorganic/organic monolith comprising a polymerized scaffolding nanocomposite (PSN) for the reasons set forth in the previous response. Furthermore, one of ordinary skill in the art would have no motivation to create such a monolith as Mueller is only concerned with the modification of a capillary to react with a standard monolith. Finally, Applicants note that Mueller experienced

significant shrinkage of the frit. (See, Paragraphs [0043] and [0044] in which Mueller notes the likely need to repeat the polymerization two or more times in order to completely fill the capillary). This is unlike the Applicants materials which surprisingly have having increased resistance to shrinkage and enhanced capillary wall adhesion as compared to prior art monolith materials (See, for example, Examples 2 and 7). In other words, Mueller teaches away from Applicants' invention. See M.P.E.P. 2144.05 stating that "[a] prima facie case of obviousness may also be rebutted by showing that the art, in any material respect, teaches away from the claimed invention." *In re Geisler*, 116 F.3d 1465, 1471 (Fed. Cir. 1997). Thus, one of ordinary skill in the art seeking to achieve a monolith with increased resistance to shrinkage and enhanced capillary wall adhesion would have no motivation whatsoever to look to Mueller, given Mueller's clear teaching away from Applicants' invention.

As such, Applicants contend that one of ordinary skill in the art would not find the instant claims obvious in light of Mueller.

CONCLUSION

In view of the foregoing, reconsideration and withdrawal of all rejections, allowance of the instant application with all pending claims, and passage of the instant application to issuance are earnestly solicited. If a telephone conversation with Applicants' representatives would help expedite the prosecution of the above-identified application, the Examiner is urged to call Applicants' representatives at the telephone number below. In

view of the amendments and remarks made herein, the application is believed to be in condition for allowance. Favorable reconsideration of the application and prompt issuance of a Notice of Allowance are respectfully requested. Please charge any required fee or credit any overpayment to Deposit Account No. 04-1105, under Order no. 60005 (49991).

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Respectfully submitted,
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